CASE STUDY: The Paradox of Investing for the Long-Term (Based on a True Story)

The paradox of taking on the risk of investments that tend to perform better over long periods is that investors are more likely to experience short periods with poor returns. To benefit from taking on the risk of, say stocks and corporate bonds, we need to maintain a focus on their typical long-term behaviour over occasionally difficult periods. Of course, it is easier to do this when those investments are intended for truly long-term purposes, so there is time over the long time frame to make up short-term losses.

This case study quantifies the effect of taking on too little risk for long-term needs and addresses the unique challenge for defining municipal needs in the short and long terms. We see how even small differences in return can have a large impact on investments over the long run.

Key Findings

- Due to the power of compounding, small differences in long-term returns add up to large amounts in ending values.
- The most important determination when investing for the long run is finding the right level of risk for a portfolio: we can intuitively appreciate the annual effect of taking on too much risk, however, we may not fully appreciate the long-term impact of not taking on enough. This cost needs to be considered in investment decisions.
- An understanding of risk tolerance is something that may evolve over time with financial and investment planning experience. Although it is almost impossible to predict market outcomes in any year, long-term market behaviour has been more consistent.
- The long-term investments in the study are all fully liquid and can be accessed at any time. However, the riskier ones fluctuate in value more, so it is crucial that they be left invested in their markets as long as possible.

Our Challenge

Under the Legal List regulations (O. Reg. 438/97), Ontario's municipalities are permitted to invest only in high-quality fixed income securities. As well, exposure to high-quality Canadian corporate bonds and Canadian equity is permitted through ONE Investment.

Some Ontario municipalities have been understandably uncomfortable moving into corporate bonds and stocks for various reasons, including:

- The changing nature of municipal operational/capital funding requirements causing unexpected shifts in investment timeframes;
- The difficulty in defining how to invest for contingencies when a large amount could be needed at any time; and,
- The pressure of public accountability during a period of investment losses.

In short, it can be tricky to define funds required in the short-term (less than 18 months) versus long-term. Over time, investment growth combined with experience in long-term infrastructure asset planning is likely to help with investment planning. This is a key difference between municipal investments and other institutional investments, such as pensions and endowments. The latter tend to be stable long-term pools of capital with predictable pay-out needs, whereas municipalities often deal with changing needs.

For these reasons, many municipalities have tended to invest exclusively or almost entirely in bank deposits and short-term high-quality fixed income. This approach is reasonable because short-term investments are unlikely to experience negative returns and they are liquid, which is important for flexibility. (The exception to that is many GICs and Principal Protected Notes that have a penalty for accessing those holdings before they mature.) However, this approach is not reasonable from a long-term perspective because many long-term municipal needs are not sufficiently well funded and returns from short-term investments are not enough to provide the needed pay-off.

The following scenario provides a quantification of the benefits that municipalities give up over long periods of time if they focus on secure short-term investments. This cost should be part of the considerations when deciding how much risk to take on.

A Real-Life Municipal Scenario

To get a real-life understanding of what using shorter term investment products over the long-term ONE Investment conducted an analysis of an Ontario municipality that held both short and long-term investments with the program. The name of the municipality is being withheld to respect client confidentiality.

The municipality has short- and long-term investments totalling $20 million, which are held in the ONE High Interest Savings Account (HISA). A simplified analysis was used to get a clearer definition of short-versus long-term fund needs, summarized below.

Total funds at January 1, 2019	$20 million
+ Inflows expected through 2019	5 million
- Expected expenses and infrastructure investments through 2019	15 million
= Long term funds available for investment	$10 million

ONE compared the municipality's bottom line if it had invested $10 million using a long-term strategy versus keeping full liquidity and safety in short-term investments at all times. To reflect the worst possible scenario, the analysis started just before the 2008 global financial crisis, when the Canadian stock market fell by 33%. Our analysis compared the annual returns of different asset mixes.

ONE worked with market indices, which exclude the effects of investment management fees and the impact of professional investment management. An index is a collection of all the securities in a market weighted by their size in order to measure an entire market's return. Table 1 shows the results of that analysis, with the indices explained below the table.

Table 1: % Annual Nominal Returns Using Market Indices

Lowest Risk ⟷ Highest Risk

	Money Market	50% Money Market + 50% Short Term Government Bonds	30% Canadian Stocks + 35% High quality corporate bonds + 35% Short-Term Government Bonds
2008	4.2%	7.2%	-5.1%
2009	0.9%	1.4%	14.9%
2010	0.6%	2.0%	8.2%
2011	1.2%	2.9%	1.1%
2012	1.0%	1.1%	4.0%
2013	1.1%	1.2%	5.1%
2014	1.0%	1.9%	5.6%
2015	0.7%	1.6%	-0.6%
2016	0.5%	0.4%	7.1%
2017	0.6%	0.1%	2.9%
2018	1.5%	1.8%	-1.3%
Total Annualized	1.2%	1.9%	3.7%

Market indices used in this analysis:

- Money market: FTSE Canada 182-Day Treasury Bill Index; also used as a proxy for the HISA
- Short-term government bonds: FTSE Canada Short All Government Bond Index
- High quality corporate bonds: FTSE Canada Corporate AAA/AA Index
- Canadian equity: S&P/TSX Composite Index

Interpreting the Returns

As risk is added to the portfolio, Table 1 shows more variability in returns from year to year, including periods of losses. However, over the entire period, at the bottom, the higher-risk asset mix generated higher long-term returns. These two effects combined are consistent with long-term market behaviour and demonstrate the paradox of long-term investing. Low-risk investing made the year-to-year experience smoother but resulted in a lower overall return.

With the Bank of Canada committing to a long-term inflation rate of 2%, the lower risk approaches do not generate enough return to compensate for growth in costs. It is necessary to use equities to generate enough return to cover inflation.

Understanding Risk Tolerance

Table 2 translates the returns into the ending market value of the portfolio each year, including all income, realized and unrealized gains. It shows the variation in portfolio values with consideration for risk tolerance. In this case, risk tolerance is defined by a number of different factors, including:

- Whether there were sufficient funds if needed in a year when markets fell;
- How much money the municipality had relative to how much it needed in the short-term;
- Its flexibility in deferring projects or finding other revenue sources; and,
- The subjective "sleep well" factor.

Table 2: **Annual Ending Market Values Assuming a Starting Value of $10,000,000**

	Money Market	50% Money Market + 50% Short Term Government Bonds	30% Canadian Stocks + 35% High quality corporate bonds + 35% Short-Term Government Bonds
2008	10,419,162	10,717,714	9,492,122
2009	10,513,320	10,870,267	10,907,594
2010	10,580,043	11,083,677	11,798,299
2011	10,711,091	11,408,131	11,931,423
2012	10,823,311	11,534,494	12,408,940
2013	10,938,414	11,676,716	13,036,027
2014	11,042,388	11,893,329	13,761,789
2015	11,124,869	12,088,621	13,685,869
2016	11,179,535	12,139,313	14,663,099
2017	11,246,072	12,152,472	15,081,765
2018	11,420,162	12,365,830	14,879,734
Ending Value	10,904,499	11,617,701	12,760,926

Moving from the least risky to the most risky asset allocations, although the returns differed by only **2.5%**, over 11 years, that created $1.9 million or a ***17% difference*** in ending market value! Over longer periods, this effect would be even larger. Keep in mind that this result included the effects of one of the worst equity markets in history. By the end of the second year, losses from the first year were made up. This demonstrates that while short-term results are harder to predict, market behaviour over the long-term is more consistent.

Visit **www.oneinvestment.ca** to learn more about how ONE Investment can help your municipality meet short and long-term financial needs.